Remarks

In view of the following discussion, the applicants submit that the claims now pending in the application are not anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Thus, the applicants believe that all of these claims are in allowable form.

REJECTIONS

A. 35 U. S. C. § 102

1. Claims 1-2, 6 and 11-12 are not anticipated by Sayag

Claims 1-2, 6 and 11-12 stand rejected under 35 U. S. C. § 102(e) as being anticipated by Sayag (U. S. Patent 7,002,533 issued February 21, 2006). The applicants submit that these claims are not anticipated by this reference.

Claims 1 and 11 are directed to a projection system 30 for projecting an image (*see*, FIG. 1 and the specification at page 2, lines 22-23). The projection system 30 includes a first imager 50 configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide a first output matrix 5 (*see*, FIGS. 1-2 and the specification at page 5, lines 3-10). A second imager 60 is positioned and configured to receive the first output matrix 5 of modulated pixels of light and modulate the individual modulated pixels of light from said first imager 50 on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image (*see*, specification at page 1, lines 15-17). The first imager 50 and the second imager 60 differ in size (*see*, specification at page 6, lines 20-222).

Sayag describes an electronic image display (*see*, Sayag at column 1, lines 12-15). The electronic image display 300 includes a rear display 315 and a front display 325 (*see*, Sayag at FIG. 3 and column 5, lines 5-9). The rear display

315 is configured to generate a first image based on first image data and the front display 325 is configured to generate a second image based on second image data (*see*, Sayag at column 3, lines 35-40). A lens assembly 305 projects the first image from the rear display 315 onto the front display 325 thereby superimposing a projected image and the second image (*see*, Sayag at column 3, lines 40-43 and column 5, lines 39-42).

Sayag does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide **a first output matrix** and second imager positioned and configured to receive **the first output matrix** of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image wherein the first imager and the second imager differ in size. Rather, Sayag describes a completely different arrangement in which a rear display is configured to generate a first image based on first image data, a front display is configured to generate a second image based on second image data and a lens assembly projects the first image from the rear display onto the front display thereby **superimposing a projected image and the second image**. Since Sayag does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide **a first output matrix** and second imager positioned and configured to receive **the first output matrix** of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image wherein the first imager and the second imager differ in size, claims 1 and 11 are patentable over Sayag.

Claims 2, 6 and 12 depend directly from claims 1 or 11, respectively. For the same reasons stated above for claims 1 and 11, claims 2, 6 and 12 are also patentable over Sayag.

B. 35 U. S. C. § 103

1. Claims 1-3, 5-6 and 8-18 are not unpatentable over Gibbon et al. in view of Sayag

Claims 1-3, 5-6 and 8-18 stand rejected under 35 U. S. C. § 103(a) as being unpatentable over Gibbon et al. (PCT Patent Application WO 01/69941 A2 published September 20, 2001) in view of Sayag (U. S. Patent 7,002,533 issued February 21, 2006). The applicants submit that these claims are not anticipated by the combination of these references.

Claims 1, 11 and 14 are directed to a projection system 30 for projecting an image (*see*, FIG. 1 and the specification at page 2, lines 22-23). The projection system 30 includes a first imager 50 configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide a first output matrix 5 (*see*, FIGS. 1-2 and the specification at page 5, lines 3-10). A second imager 60 is positioned and configured to receive the first output matrix 5 of modulated pixels of light and modulate the individual modulated pixels of light from said first imager 50 on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image (*see*, specification at page 1, lines 15-17). The first imager 50 and the second imager 60 differ in size (*see*, specification at page 6, lines 20-222).

Gibbon et al. describes a serial SLM (Spatial Light Modulator) system (*see*, Gibbon et al. at page 9, lines 1-3). The serial SLM system includes a first DMD device 16A and a second DMD device 20A (*see*, Gibbon et al. at FIG. 3 and page 9, lines 14-18). A lens relay 18A images the light from the first DMD

device 16A onto the surface of the second DMD device 20A (*see*, Gibbon et al. at FIG. 3 and page 9, lines 15-17).

Gibbons et al. does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide a first output matrix and second imager positioned and configured to receive the first output matrix of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image **wherein the first imager and the second imager differ in size**. Rather, Gibbons et al. only describes an arrangement in which a lens relay images the light from a first DMD device onto the surface of a second DMD device. Since Gibbons et al. does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide a first output matrix and second imager positioned and configured to receive the first output matrix of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image **wherein the first imager and the second imager differ in size**, claims 1, 11 and 14 are patentable over Gibbons et al.

Sayag describes an electronic image display (*see*, Sayag at column 1, lines 12-15). The electronic image display 300 includes a rear display 315 and a front display 325 (*see*, Sayag at FIG. 3 and column 5, lines 5-9). The rear display 315 is configured to generate a first image based on first image data and the front display 325 is configured to generate a second image based on second image data (*see*, Sayag at column 3, lines 35-40). A lens assembly 305 projects the first image from the rear display 315 onto the front display 325 thereby superimposing a projected image and the second image (*see*, Sayag at column 3, lines 40-43 and column 5, lines 39-42).

Sayag does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide **a first output matrix** and second imager positioned and configured to receive **the first output matrix** of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image wherein the first imager and the second imager differ in size. Rather, Sayag describes a completely different arrangement in which a rear display is configured to generate a first image based on first image data, a front display is configured to generate a second image based on second image data and a lens assembly projects the first image from the rear display onto the front display thereby **superimposing a projected image and the second image**. Since Sayag does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide **a first output matrix** and second imager positioned and configured to receive **the first output matrix** of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image wherein the first imager and the second imager differ in size, claims 1, 11 and 14 are patentable over Sayag.

Furthermore, since Gibbons et al. only describes an arrangement in which a lens relay images the light from a first DMD device onto the surface of a second DMD device and Sayag describes an arrangement in which a rear display is configured to generate a first image based on first image data, a front display is configured to generate a second image based on second image data and a lens assembly projects the first image from the rear display onto the front display thereby **superimposing a projected image and the second image**, the combination of these references does not describe or suggest applicants

arrangement described in claims 1, 11 and 14. In particular, claims 1, 11 and 14 recite a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide **a first output matrix** and second imager positioned and configured to receive **the first output matrix** of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image **wherein the first imager and the second imager differ in size**. Thus, claims 1, 11 and 14 are patentable over the combination of these references.

Claims 2-3, 5-6, 8-10, 12-13 and 15-18 depend directly from claims 1, 11 or 14, respectively. For the same reasons stated above for claims 1, 11 and 14, claims 2-3, 5-6, 8-10, 12-13 and 15-18 are also patentable over Gibbons et al. in view of Sayag.

2. Claim 7 is not unpatentable over Gibbon et al. and Sayag and further in view of Hansen et al.

Claim 7 stands rejected under 35 U. S. C. § 103(a) as being unpatentable over Gibbon et al. (PCT Patent Application WO 01/69941 A2 published September 20, 2001) and Sayag (U. S. Patent 7,002,533 issued February 21, 2006) and further in view of Hansen et al. (U. S. Patent 6,234,634 issued May 22, 2001. The applicants submit that these claims are not anticipated by the combination of these references.

Claim 7 depends indirectly from claim 1 and is directed to a projection system 30 for projecting an image (*see*, FIG. 1 and the specification at page 2, lines 22-23). The projection system 30 includes a first imager 50 configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide a first output matrix 5 (*see*, FIGS. 1-2 and the specification at page 5, lines 3-10). A second imager 60 is positioned

and configured to receive the first output matrix 5 of modulated pixels of light and modulate the individual modulated pixels of light from said first imager 50 on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image (*see*, specification at page 1, lines 15-17). The first imager 50 and the second imager 60 differ in size (*see*, specification at page 6, lines 20-222).

Gibbon et al. describes a serial SLM (Spatial Light Modulator) system (*see*, Gibbon et al. at page 9, lines 1-3). The serial SLM system includes a first DMD device 16A and a second DMD device 20A (*see*, Gibbon et al. at FIG. 3 and page 9, lines 14-18). A lens relay 18A images the light from the first DMD device 16A onto the surface of the second DMD device 20A (*see*, Gibbon et al. at FIG. 3 and page 9, lines 15-17).

Gibbons et al. does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide a first output matrix and second imager positioned and configured to receive the first output matrix of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image **wherein the first imager and the second imager differ in size**. Rather, Gibbons et al. only describes an arrangement in which a lens relay images the light from a first DMD device onto the surface of a second DMD device. Since Gibbons et al. does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide a first output matrix and second imager positioned and configured to receive the first output matrix of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel

of said image **wherein the first imager and the second imager differ in size**, claim 7 is patentable over Gibbons et al.

Sayag describes an electronic image display (*see*, Sayag at column 1, lines 12-15). The electronic image display 300 includes a rear display 315 and a front display 325 (*see*, Sayag at FIG. 3 and column 5, lines 5-9). The rear display 315 is configured to generate a first image based on first image data and the front display 325 is configured to generate a second image based on second image data (*see*, Sayag at column 3, lines 35-40). A lens assembly 305 projects the first image from the rear display 315 onto the front display 325 thereby superimposing a projected image and the second image (*see*, Sayag at column 3, lines 40-43 and column 5, lines 39-42).

Sayag does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide **a first output matrix** and second imager positioned and configured to receive **the first output matrix** of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image wherein the first imager and the second imager differ in size. Rather, Sayag describes a completely different arrangement in which a rear display is configured to generate a first image based on first image data, a front display is configured to generate a second image based on second image data and a lens assembly projects the first image from the rear display onto the front display thereby **superimposing a projected image and the second image**. Since Sayag does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide **a first output matrix** and second imager positioned and configured to receive **the first output matrix** of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis

proportional to a second gray scale value provided for each pixel of said image wherein the first imager and the second imager differ in size, claim 7 is patentable over Sayag.

Hansen et al. describes an image projection system (*see*, Hansen et al. at column 1, lines 5-9). The image projection system includes a PBS 14 (polarizing beam splitter) that reflects light of one polarization from a source 20 to a liquid crystal array 26 (*see*, Hansen et al. at FIG. 1a and column 11, lines 1-7).

Hansen et al. does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide **a first output matrix** and second imager positioned and configured to receive **the first output matrix** of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image **wherein the first imager and the second imager differ in size**. Rather, Hansen et al. describes a completely different arrangement in which a PBS (polarizing beam splitter) that reflects light of one polarization from a source to a liquid crystal array. Since Hansen et al. does not describe or suggest a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide **a first output matrix** and second imager positioned and configured to receive **the first output matrix** of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image **wherein the first imager and the second imager differ in size**, claim 7 is patentable over Sayag.

Furthermore, since Gibbons et al. only describes an arrangement in which a lens relay images the light from a first DMD device onto the surface of a second DMD device, Sayag describes an arrangement in which a rear display is configured to generate a first image based on first image data, a front display is

configured to generate a second image based on second image data and a lens assembly projects the first image from the rear display onto the front display thereby **superimposing a projected image and the second image**, and Hansen et al. only describes an arrangement in which a PBS (polarizing beam splitter) reflects light of one polarization from a source to a liquid crystal array, the combination of these references does not describe or suggest applicants arrangement described in claim 7. In particular, claim 7 recites a projection system for projecting an image including a first imager configured to modulate a light band on a pixel-by-pixel basis proportional to gray scale values provided for each pixel of the image to provide **a first output matrix** and second imager positioned and configured to receive **the first output matrix** of modulated pixels of light and modulate the individual modulated pixels of light from said first imager on a pixel-by-pixel basis proportional to a second gray scale value provided for each pixel of said image **wherein the first imager and the second imager differ in size**. Thus, claim 7 is patentable over the combination of these references.

CONCLUSION

Thus, the applicants submit that none of the claims presently in the application are anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Consequently, the applicants believe that all of the claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application,

it is requested that the Examiner telephone Ms. Patricia A. Verlangieri, at (609) 734-6867, so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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